

تعلم برمجة البايثون

القسم الرابع : العمليات Operations

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١- عمليات الحساب (Arithmetic Operators)

Operators	Symbols	Examples
Addition	+	x + y
Subtraction	-	x - y
Multiplication	*	x * y
Division	/	x / y
Modulo	%	x % y
Unary plus	+	+x
Unary minus	-	-x
Assignment	=	x = y
Exponent	**	x ** y
Floor Divide	//	x // y

Examples :

x = 8

y = 3

z = 2

Operators	Prints	Result
Addition	print (x + y)	11
Subtraction	print (x - y)	5
Multiplication	print (x * y)	24
Division	print (x / y)	2.666666666666667
Modulo	print (x % y)	2
Unary plus	print (+x)	8
Unary minus	print (-x)	-8
Assignment	print (x = y)	
Exponent	print (x ** y)	512
Floor Divide	print (x // y)	2

٢- عمليات المقارنه (Comparison Operators)

Operators	Symbols	Examples
Equal to	<code>==</code>	<code>x == y</code>
Not equal to	<code>!=</code>	<code>x != y</code>
Greater than	<code><</code>	<code>x < y</code>
Less than	<code>></code>	<code>x > y</code>
Greater than or Equal to	<code><=</code>	<code>x <= y</code>
Less than or Equal to	<code>>=</code>	<code>x >= y</code>

Examples :

`x = 8`
`y = 3`
`z = 2`

Operators	Print	Result
Equal to	<code>print (x == y)</code>	FALSE
Not equal to	<code>print (x != y)</code>	TRUE
Greater than	<code>print (x < y)</code>	FALSE
Less than	<code>print (x > y)</code>	TRUE
Greater than or Equal to	<code>print (x <= y)</code>	FALSE
Less than or Equal to	<code>print (x >= y)</code>	TRUE

٣- عمليات المنطق (Logical Operators)

Operators	Symbols	Examples
AND	and	x and y
OR	or	x or y
NOT	not	x not y

Examples :

x = 8

y = 3

z = 2

TRUE	AND	TRUE	TRUE
TRUE	AND	FALSE	FALSE
FALSE	AND	TRUE	FALSE
FALSE	AND	FALSE	FALSE

TRUE	OR	TRUE	TRUE
TRUE	OR	FALSE	TRUE
FALSE	OR	TRUE	TRUE
FALSE	OR	FALSE	FALSE

Operators	Symbols	Examples
AND	and	x == 4 and y == 8
OR	or	x == 4 or y == 8
NOT	not	not x == 10

٤- عمليات الأعداد الثنائية (Bitwise Operators)

Operators	Symbols	Examples
AND	&	$x \& y$
OR		$x y$
XOR	^	$x \wedge y$
compliment OR	~	$x \sim y$
Left shift	<<	$x \ll y$
Right shift	>>	$x \gg y$

Examples :

x = 8 >> 1000 bit
y = 3 >> 0011 bit
z = 2 >> 0010 bit

Operators	Print	Result
AND	<code>print (x & y)</code>	0
OR	<code>print (x y)</code>	11
XOR	<code>print (x ^ y)</code>	11
compliment OR	<code>print (~x)</code>	-9
Left shift	<code>print (x << y)</code>	64
Right shift	<code>print (x >>y)</code>	1

٥- عمليات الإسناد (Assignment Operators)

Operators	Symbols	Examples
Assignment	=	x = y
Add AND Assignment	+=	x += y
Subtract AND Assignment	-=	x -= y
Multiply AND Assignment	*=	x *= y
Divide AND Assignment	/=	x /= y
Modulo AND Assignment	%=	x %= y
Exponent AND Assignment	**=	x **= y
Floor Divide AND Assignment	//=	x //= y
Left shift AND Assignment	<<=	x <<= y
Right shift AND Assignment	>>=	x >>= y
Bitwise AND Assignment	&=	x &= y
Bitwise exclusive OR and Assignment	^=	x ^= y
Bitwise inclusive OR and Assignment	 =	x = y

Examples :

x = 8

y = 3

z = 2

Operators	Print	Result
Add AND Assignment	x+= y	11
Susbtract AND Assignment	x-= y	5
Multiply AND Assignment	x*= y	24
Divide AND Assignment	x/= y	2.666665
Modulo AND Assignment	x%= y	2
Exponent AND Assignment	x**= y	512
Floor Divide AND Assignment	x//= y	64
Left shift AND Assignment	x<<= y	1
Right shift AND Assignment	x>>= y	8
Bitwise AND Assignment	x&= y	0
Bitwise exclusive OR and Assignment	x^= y	11
Bitwise inexclusive OR and Assignment	x = y	11